

FAA William J. Hughes Technical Center

En Route Integration and Interoperability Facility (EI²F)

Located at the FAA William J. Hughes Technical Center, the EI²F represents an Air Route Traffic Control Center (ARTCC) equipped with both the Host and Oceanic Computer System Replacement (HOCSR) and the Display System Replacement (DSR).

The EI²F activities are primarily directed and funded by the EnRoute Integrated Product Team (IPT) and are devoted to exploring the issues associated with modernizing the existing National Airspace System (NAS) EnRoute Infrastructure. The EI²F is open to hardware and software modifications in order to maximize the efficiency of the prototype development process. The centralized facility is available to both Government and Industry organizations that support the emerging NAS architecture. This enables the FAA to implement common practices that help alleviate the burden and expense of conducting prototype-related activities at ARTCCs. The facility provides an enroute system environment that can be used to perform experimentation, prototype evaluation, proof of concept evaluation, system-level integration, and verification without risk of impacting live air traffic control (ATC) operations or without requiring site personnel to operate and/or maintain additional subsystems. Furthermore, the facility supports formal training of field personnel on newly implemented systems.

Objectives

The objectives of the EI²F include:

1. Provide a realistic environment for the engineering evaluation of ATC infrastructure and subsystem enhancements.
2. Provide a common infrastructure for the integration and interoperability of ATC subsystems and functions.
3. Facilitate improvements in the development and life-cycle support costs of ATC functions.
4. Conduct and support development, validation, and prototype and engineering evaluations.

Interconnectivity

The EI²F labs can be configured as a single DSR-based ARTCC with redundant HOCSR processors or as two smaller independent ARTCCs simultaneously. These systems interface with all the typical enroute subsystems (Peripheral Adapter Module Replacement Item, User Request Evaluation Tool, Host Interface Device/NAS Local Area Network, etc.) Simulated air traffic data can be generated directly from the Host processor, by radar simulation tools, or by an interactive simulation pilot facility. The EI²F is also interconnected to all laboratory facilities located within the Technical Center at the physical network level. In-house simulation capabilities and interconnectivity to those Technical Center laboratories allows the facility to conduct standalone experiments and participate in experiments



that interface with other ATC domains. Recently, the E²F developed a baseline EnRoute Network Development Lab (ENDL) to provide the testbed environment for enroute open system migration activities.

Current Status

The E²F is up and operating in support of the EnRoute modernization efforts that are currently underway.

For more information on the EnRoute Integration and Interoperability Facility, contact:

Federal Aviation Administration
William J. Hughes Technical Center
Atlantic City International Airport, NJ 08405
Phone: (609) 485-7937
<http://www.tc.faa.gov>

EnRoute
Facility